

## **Remarks**

This paper is filed in response to the office action of June 15, 2009. After amendment, claims 9-12 remain pending, claims 1-8 and 13-27 having been canceled to advance prosecution of the instant application in seeking an allowance and claims 28-53 having been canceled pursuant to the Examiner's restriction requirement and Applicants' election of the invention. Claims 9-11 have not been amended, and claim 12 has been amended by incorporating subject matter of claim 9 into claim 12, thus making claim 12 related to the original inventive grouping and patentable by rejoinder. No new matter has been added by way of the present amendment.

Applicants and their attorney wish to extend their appreciation to Examiner McDonough for his consideration in conducting a telephonic interview with Dr. John Hartwig, a co-inventor of the subject matter of the present invention, and the undersigned attorney for Dr. Hartwig on November 4, 2009. During that interview, Dr. Hartwig explained the deficiencies of the prior art reference, international application to Berg Van Den, published as WO 02/04466 ("WO '466"), in failing to disclose the present invention as presented in claims 9-12. Pursuant to that interview and in an effort to provide further detail to the deficiencies of WO '466 in failing to disclose the present invention, Applicants respectfully submit the declaration of Dr. Hartwig in support of the patentability of the presently claimed invention.

In his June 15, 2009 office action, Examiner McDonough rejected claims 1 -11 as being anticipated by WO '466 for the reasons which are stated in the office action on pages 3-4. The Examiner separately rejected claims 1-5 and 7-11 under the judicially created doctrine of obviousness-type double patenting as being obvious over claims 1-18 of copending application number 11/579,221. Applicants shall address each of the Examiner's rejections in the sections which follow.

### *The Rejection of Claims 1-11 As Being Anticipated by WO '446*

The Examiner has rejected claims 1-4 and 9-11 as being anticipated by WO '466 for the reasons which are set forth in the first paragraph on page 4 of the June, 2009 office action. The Examiner has separately rejected claims 5, 7 and 8 as being anticipated by the teachings of WO '466 as applied to claims 1 and 4. Applicants respectfully submit that the rejection of claims 1-8 as being anticipated by WO '466 have been mooted by the cancellation of those claims from the application. Regarding the Examiner's rejection of claims 9-11, Applicants respectfully submit the attached declaration of co-inventor Dr. John Hartwig in support of patentability of claims 9-11 and further, claim 12, as being rejoined with claim 9-11, given the reference of method claim 12 to the activated catalyst of claim 9.

A review of the prior art reference cited against the instant application, WO '466, shows that WO '466 cannot possibly anticipate the presently claimed invention. Pursuant to the present invention, the iridium catalyst set forth in claim 9 (and claims 10-12 dependent thereon) is a five-membered ring metalacycle containing iridium. In contrast to the present invention, the teachings of WO '466 are not expressly directed to a five-membered iridium ring metalacycle and the passages cited by the Examiner do not produce and *cannot possibly produce* the claimed catalysts. In particular, example VI on pages 22-23 of WO '466 was cited by the Examiner as anticipating the present invention, but a review of that example evidences that the experiment was conducted with a ligand lacking a sufficient number of atoms on the amino group to generate a five-membered metalacycle. Example VI cannot possibly lead to the catalyst metalacycles which are claimed in the present application.

In particular, WO '466 never claimed, described or identified in the body of the specification or in any of the examples, the structure of a cyclometalated species as claimed. Moreover, the procedure of example VI cited by the examiner describes the use of ligand 1,  $[\text{Ir}(\text{COD})\text{Cl}]_2$ , and base, but ligand 1 has a structure that actually *prevents* formation of the type of five-membered metalacycle set forth in pending claims 9-12 of the instant application because

there are simply not enough atoms on the nitrogen in ligand 1 to produce a cyclometalated species according to the present invention. Because Ligand 1 of WO '466 contains a dimethylamino group, cyclometalation would generate a four-membered ring (Ir, P, N, and CH<sub>2</sub>) that is completely distinct from the presently claimed structure which contains a five-membered ring.

Finally, the metalacyclic structure of the present invention is novel, as compared to the simple combination of ligand and iridium with or without base as described by WO '466, because the metalcycle of the present invention lacks one hydrogen (described by the prior art) and is attached to the Iridium metal through a metal-phosphorus and metal-carbon bond. There is simply no way that the prior art cited, WO '466 can be interpreted to anticipate the present invention. Applicants respectfully request to withdraw this rejection inasmuch as the evidentiary presentation set forth herein and in the attached declaration of Dr. Hartwig obviates this rejection.

*The Rejection of Claims 9-12 As Being Obvious Over Claims 1-18 of Co-pending Application S.N. 11/579,221*

The Examiner has separately rejected claims 1-5 and 7-11 under the judicially created doctrine of obviousness-type double patenting as being obvious over claims 1-18 of copending application number 11/579,221 ("the '221 application"). Given that claims 1-8 have been canceled from the instant application, further discussion of those claims has been mooted. Regarding claims 9-11 (by rejoinder, claim 12 as well), Applicants respectfully traverse the Examiner's rejection of the presently pending claims.

As presented in the attached declaration of Dr. John Hartwig, co-inventor of the present application as well as the '221 application, the present claims are distinguishable over claims 1-18 of the '221 application. Dr. Hartwig explains that claims 1-18 of the '221 application are directed to chemical structures that are not described or obvious over structures which are set

forth in 9-12 of the present application. The ligands which are described in claims 1-18 of the '221 application are *not* symmetrical. In contrast to the compounds claimed in the '221 application, the presently claimed compositions lack one of the stereochemical elements which are present in the '221 claimed compositions, and are therefore simpler and less expensive to make, providing catalysts that have similar activity and selectivity as those in the '221 application at reduced cost. Consequently, the compositions of the present invention are clearly non-obvious over the compositions which are set forth in claims 1-18 of the '221 application.

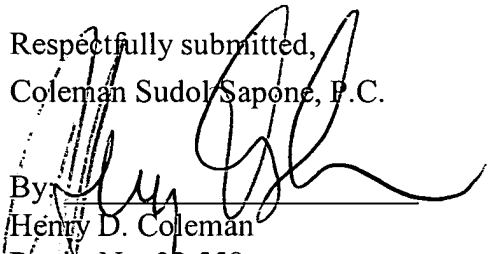
For the above reasons, Applicants respectfully assert that the claims set forth in the amendment to the application of the present invention are now in compliance with 35 U.S.C. Applicants respectfully submit that the present application is now in condition for allowance and such action is earnestly solicited. Applicants have neither added nor cancelled any claim. No fee is due therefore for the presentation of this amendment. If any fee is determined to be due or any overpayment has been made previously, the Commissioner is cordially requested to charge or credit Deposit Account No. 04-0838.

No fee is due for the presentation of this amendment. A petition for an extension is enclosed as is the appropriate fee.

Should the Examiner feel the need to discuss the instant application in order to expedite allowance, the Examiner is cordially requested to telephone the undersigned attorney at the indicated telephone number.

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Respectfully submitted,  
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CERTIFICATE OF MAILING

I hereby certify that this correspondence is being sent by first class mail in an envelope addressed to the Commissioner for Patents, United States Patent and Trademark Office, Alexandria, Virginia, 22313-1450, on November 12, 2009.

  
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